

A NEW SPECIES OF *NEMIPTERUS* (PISCES: NEMIPTERIDAE) FROM THE SOUTH-WESTERN PACIFIC

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ABSTRACT

A new species of *Nemipterus* from Fiji and Vanuatu is described and figured. The new species appears most closely related to *N. aurifilum* (Ogilby) and *N. bathybius* Snyder, but differs principally in colour pattern: *N. aurifilum* has a single yellow stripe from beneath the origin of the lateral line to the caudal peduncle; *N. bathybius* has two yellow stripes, the first from beneath the origin of the lateral line to the peduncle and the second from behind the pectoral fin to the caudal fin base; whereas the new species has a single indistinct pale yellow stripe from above the pectoral fin base to the peduncle.

KEYWORDS: *Nemipterus*, new species, Fiji, Vanuatu.

INTRODUCTION

In the course of revisionary studies of the Indo-West Pacific fish genus *Nemipterus*, presently being undertaken by the author, numerous specimens were received for identification. Amongst the material obtained were several specimens of an undescribed species of *Nemipterus* sent from Fiji by Dr A.D. Lewis. Additional specimens from Vanuatu (New Hebrides) were found also in the Australian Museum. These specimens are described herein as a new species of *Nemipterus*.

Methods of counting and measuring specimens follows Russell (1986). Lengths of specimens are standard length (SL) unless otherwise indicated, and all measurements are expressed in millimetres rounded to the nearest 0.1 mm. In the description, measurements and counts for the holotype are given first; those for the paratypes, where different from the holotype, are enclosed in parentheses.

Specimens are deposited in the Australian Museum, Sydney (AMS) and Northern Territory Museum, Darwin (NTM).

SYSTEMATICS

Family Nemipteridae

Nemipterus vitiensis sp. nov.

(Fig. 1, Tables 1-2)

Type material. HOLOTYPE - NTM S.11744-001: 170 mm SL, male, Vatutotolu

Reef, Viti Levu, Fiji, 17°10'S, 177°38'E, hook and line, 273 m depth, coll. P. Mead, 16 March 1984. PARATYPES - AMS I.12012: 140.9 mm SL, Efati I., Vila, Vanuatu, 17°45'S, 168°18'E. AMS I.12013: 161.7 mm SL, Vila, Vanuatu, 17°45'S, 168°18'E, 27.3 m depth. AMS I.26907-001: 2 specimens, 142.5-159.0 mm SL, Suva market, Viti Levu, Fiji, coll. A.D. Lewis, May 1984. NTM S.11140-001: 2 specimens, 190.5-218.5 mm SL, Suva market, Viti Levu, Fiji, coll. A.D. Lewis, 17 February 1984.

Diagnosis. Pectoral-fin rays ii,14-16; gill rakers 12-14; body moderately elongate, depth 3.2-3.8 in SL; head length about equal to body depth, depth 1.0-1.1 in head length; diameter of eye equal to snout length, 1.0 in snout; lower margin of eye tangent to a line from tip of snout to upper pectoral fin base; suborbital shallow, its lower edge emarginate, least depth 2.0-3.0 in eye diameter; imaginary line extended upward from posterior edge of suborbital reaching dorsal profile about 3-7 scale rows before origin of dorsal fin; pectoral and pelvic fins moderately long, both reaching to or beyond level of vent; upper lobe of caudal fin with long, trailing filament.

Description. Dorsal-fin rays X,9; anal-fin rays III,7; pectoral-fin rays ii,14 (left) or 15 (right) (ii,14-16); lateral-line scales 46 (46-48); transverse scale rows 3/11 (3/10-11); gill rakers 14 (12 in New Hebrides paratype only; gills removed in Fiji paratypes).

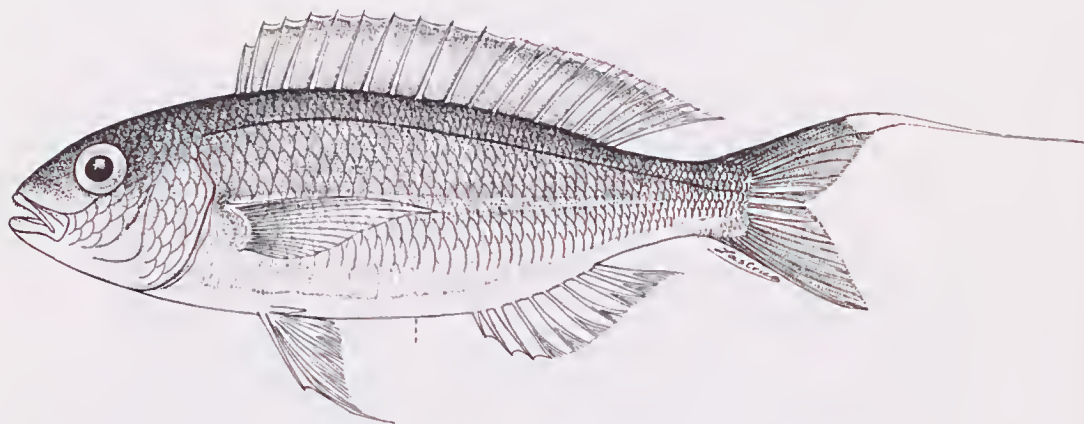


Fig. 1. *Nemipterus vitiensis*, drawing based on paratype (NTM S.11140-001, 190.5 mm SL).

Depth 3.2 (3.4-3.8) in SL; head 3.2 (3.2-3.5) in SL; head length about equal to body depth, depth 1.0 (1.0-1.1) in head; snout short, bluntly rounded in profile, 3.2 (3.0-3.3) in head; eye 3.1 (3.0-3.2) in head; diameter of eye equal to snout length, 1.0 in snout; lower margin of eye tangent to line from tip of snout to upper pectoral fin base; interorbital width 1.7 (1.6-1.8) in eye; least depth of suborbital 2.5 (2.0-3.0) in eye; ventral margin of suborbital emarginate, its posterior edge rounded; an imaginary line extended upward from posterior edge reaching dorsal profile about 3-7 scale rows before origin of dorsal fin; naked width of preopercle 2.3 (1.8-2.3) in scaly width; margin of preopercle finely denticulate; caudal peduncle depth 1.3 (1.3-1.4) in

peduncle length; dorsal fin length 1.9 in SL; dorsal spines 8-10 longest, 1.8 (1.5-1.9) times length of first dorsal spine; dorsal rays 6-8 longest, 1.3 (1.4-1.6) times length of longest dorsal spine; anal fin length 5.6 (5.6-5.9) in SL; first anal spine 2.2 (1.7-2.2) in second; second anal spine 1.3 (1.2-1.3) in third; pectoral fins moderately long, reaching to or beyond level of vent, length 1.1 (1.0-1.2) in head; pelvic fins moderately long, reaching almost to or just beyond vent, length 1.5 (1.3-1.4) in head; pectoral fins length 0.7 (0.7-0.9) in pelvic fins length; caudal fin forked, upper rays produced into long, trailing filament.

Maxillary reaching to below anterior margin of pupil; jaw teeth small, pointed, in narrow tapering bands in both jaws; upper jaw

Table 1. Measurements (mm) of type specimens of *Nemipterus vitiensis*.

Measurement	Holotype	Paratypes		AMS	AMS	AMS	NTM	NTM
	NTM	AMS	AMS					
	S.11744-001	1.12012	1.12013	1.26907-001	1.26907-001	S.11140-001	S.11140-001	S.11140-001
Standard length	170.0	140.9	161.7	142.5	159.0	190.5		218.5
Depth	52.4	39.2	46.0	38.0	45.7	56.3		62.0
Head length	53.4	44.6	50.5	41.7	45.5	54.8		64.0
Snout length	16.9	13.8	15.3	13.0	15.0	17.4		20.3
Eye diameter	17.1	15.0	16.0	13.3	15.0	18.0		20.0
Interorbital width	10.2	8.5	9.1	8.0	9.1	11.6		12.5
Suborbital width	6.8	4.8	5.4	5.3	6.1	8.0		10.2
Peduncle depth	17.9	13.8	16.2	14.4	15.0	20.0		21.7
Peduncle length	24.0	19.0	22.1	20.7	20.0	28.3		31.4
Dorsal fin length	91.7	72.2	85.1	74.3	83.7	99.1		112.3
Anal fin length	30.4	23.8	28.9	25.5	28.5	32.4		37.9
Pectoral fin length	48.6	39.3	49.0	35.5	43.8	54.5		63.3
Pelvic fin length	35.9	30.2	35.6	32.4	35.0	41.0		49.8
First dorsal spine length	12.0	10.3	9.7	11.4	12.5	12.4		14.1
Longest dorsal spine length	21.2	18.0	18.8	16.8	16.5	23.1		26.7
Longest dorsal ray length	27.2	20.8	25.2	24.4	27.1	32.2		42.1
First anal spine length	6.0	5.0	6.0	5.6	6.1	6.0		9.0
Second anal spine length	12.9	10.2	11.9		12.9	13.2		14.9
Third anal spine length	17.4	12.8	14.9	14.2	15.5	17.2		19.4
Preopercle scaly width	12.9	9.3	9.5	9.0	10.1	13.0		13.7
Preopercle naked width	5.7	5.1	4.7	4.5	5.6	5.7		7.2

with anterior outer row of 4 pair of small, recurved canines.

Colour in alcohol: body pale brown, with traces of silvery white on opercle and ventral surface. Faint dusky submarginal band along dorsal fin.

Colour in life (from colour transparencies): head and body silvery white, dusky blue on dorsum; indistinct, pale yellow stripe from above pectoral fin to caudal peduncle; broad lemon-yellow band on either side of ventral midline; eye silvery; dorsal fin light dusky, upper margin of fin yellow-edged, with dusky mauve submarginal band; anal fin transparent; caudal fin dusky pink, caudal filament yellow; pelvic fins transparent; pectoral fins pink, with dusky base.

Etymology. Named *vitiensis* after the main Fiji island, Viti Levu, where the holotype and 4 of the 6 paratypes were collected.

Remarks. *Nemipterus vitiensis* appears to be most closely related to *N. aurifilum* (Ogilby, 1910), a species that is restricted to tropical and subtropical eastern Australia, and *N. bathybius* Snyder, 1911, which ranges from southern Japan to northwestern Australia. All three species are characterised by having a long caudal filament and a yellow band on either side of the midventral line. However, the position of stripes on the sides of the body readily distinguishes fresh specimens of *N. vitiensis* from *N. bathybius* and *N. aurifilum*: *N. vitiensis* has a single, indistinct pale yellow stripe from above the pectoral fin to the caudal peduncle; *N. bathybius* has two yellow stripes, one from beneath the origin of the lateral line to the peduncle, and the other from behind the pectoral fin to the caudal base; and *N. aurifilum* has a single yellow stripe from beneath the origin of the lateral line to the peduncle. In preserved specimens all traces of striping on the body are lost.

Meristic data are not useful in separating species of *Nemipterus*, and proportional measurements do not provide complete separation of the taxa. Selected meristic and morphometric data for *N. vitiensis*, *N. aurifilum* and *N. bathybius* are given in Table 2. Only a narrower interorbital width (1.6-1.8 in eye diameter) clearly separates *N. vitiensis* from *N. aurifilum* (interorbital width 1.3-1.5 in eye diameter), although *vitiensis* also tends to have a slightly longer snout (3.0-3.3 in head length, versus 3.3-3.9) and somewhat broader naked

Table 2. Selected counts and proportional measurements (mm) of *Nemipterus vitiensis*, *N. aurifilum* and *N. bathybius*.

	<i>N. vitiensis</i>	<i>N. aurifilum</i>	<i>N. bathybius</i>
Pectoral branched rays	14-16	13-15	13-15
Lateral line scales	46-48	46-49	46-49
Transverse scale rows			
above lateral line	3.5-3.5	3.0-3.5	3-4
Transverse scale rows			
below lateral line	10-11	9-10	9-11
Gill rakers (total)	12-14	14-20	13-16
Depth in SL	3.2-3.8	3.2-3.8	2.9-3.6
Head in SL	3.2-3.5	3.1-3.6	2.9-3.5
Depth in head length	1.0-1.1	1.0-1.2	0.9-1.1
Snout in head length	3.0-3.3	3.3-3.9	3.1-3.9
Eye in head length	3.0-3.2	2.6-3.4	2.7-3.6
Eye in snout length	0.9-1.0	0.7-1.0	0.7-1.2
Interorbital width in eye diameter	1.6-1.8	1.3-1.5	1.3-1.9
Suborbital width in eye diameter	2.0-3.1	2.2-4.7	1.9-4.7
Peduncle depth in peduncle length	1.3-1.4	1.2-1.6	1.0-1.4
Dorsal fin length in SL	1.9-2.0	1.8-2.1	1.8-2.1
Anal fin length in SL	5.6-5.9	5.4-6.1	5.0-6.0
Pectoral fin length in head length	1.0-1.2	1.0-1.3	1.0-1.4
Pelvic fin length in head length	1.3-1.5	1.3-1.6	1.1-1.6
Pectoral fin length in pelvic fin length	0.7-0.9	0.6-1.0	0.7-1.0
First dorsal spine length			
in longest dorsal spine	1.5-1.9	1.5-2.9	1.3-2.4
Longest dorsal spine length			
in longest dorsal ray	1.3-1.6	1.1-1.4	1.0-1.6
First anal spine length in second anal spine	1.7-2.2	1.7-2.3	1.6-2.4
Second anal spine length in third anal spine	1.2-1.3	1.2-1.4	1.1-1.4
Preopercle scaly width in naked width	1.8-2.3	1.4-1.9	1.5-2.2

preopercle (preopercle scaly width 1.8-2.3 in naked width, versus 1.4-1.9) than *aurifilum*. In *Nemipterus vitiensis* and *N. bathybius* the angle of the posterior edge of the suborbital is more acute, and a line drawn upwards from the posterior edge of the suborbital reaches the dorsal profile before the origin of the dorsal fin; while in *N. aurifilum* the angle of the posterior margin of the suborbital is distinctly obtuse, and a line drawn upwards from it reaches the dorsal profile at or behind the origin of the dorsal fin. *Nemipterus vitiensis* may also have a lower gill raker count (12-14) than *N. aurifilum* (14-20) or *N. bathybius* (13-16), but only two of the specimens examined had intact gill arches and further material needs to be examined.

Nemipterus vitiensis is so far known only from Fiji and Vanuatu (New Hebrides). Specimens were collected in depths ranging from 27-273 m.

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